

The Planters' Chronicle.

RECOGNISED AS THE OFFICIAL ORGAN OF THE U. P. A. S. I., INCORPORATED.

VOL. VIII. No. 18.

MAY 3, 1915.

[PRICE AS. 8.]

THE U. P. A. S. I.

(INCORPORATED.)

Contents.

The Scientific Department publishes an interesting contribution on "Mosquito Blight" and the methods used to get rid of it and in connection with spraying tea bushes for killing insects a good insecticide called Vermisapin recommended by Mr. Munwell Lefrey, the Imperial Entomologist, is printed. It has been used with success and can be procured in Calcutta.

The Scientific Department draws attention to a valuable article contributed by Mr. P. M. Wilkins called "Coffee Manuring on a Scientific Basis." The article should rouse general interest, not only amongst coffee planters but all interested in soil cultivation showing how increased returns and profit can be earned by judicious manuring under Scientific advice. The figures given by Mr. Wilkins are a revelation and his introductory remarks on the all round improvement of his estate and coffee, are startling and conclusive as to the value of scientific advice, whole-heartedly carried out. By permitting his report and tabular statement to be published in the *Chronicle* Mr. Wilkins merits the thanks of the whole Planting Community.

The proceedings of the Nilgiri Planters' Association are printed. The Honorary Secretary in his report refers to an unpleasant incident, of a Ceylon Tea makers once was in his employment, who on his return to Ceylon attempted to bribe some of the Honorary Secretary's coolies. The matter was represented to Ceylon Planters' Association and through them to the would-be crimpers employer who *at once* dismissed him from his employment. The thanks of the Planting Community are due to the employer and to the Ceylon Planters' Association for their prompt treatment of this case. We are confident that all cases of a like nature if brought to their notice will receive the same prompt and courteous consideration from the Ceylon Planters' Association. It is a pity that all irregular and unauthorised recruiters cannot be treated in the same way.

From the *Agricultural News* is reproduced an interesting article on the variability in the quality of seeds, especially referring to the Tropics.

THE SCIENTIFIC DEPARTMENT, U.P.A.S.I.

Mosquito Blight of Tea.—Mosquito Blight (*Helopeltis*) is a very serious pest in several of the Tea growing districts of Southern India and causes a considerable amount of damage. Three years ago a number of experiments were begun with methods of dealing with it, information was published in the *Chronicle* with regard to Mr. Antram's methods of spraying, &c., (V. pp. 170, 181), and the Planting Expert wrote a good deal about it in his four reports on Tea districts. A planter who has carried out some systematic work with this pest kindly sends for publication a digest of the methods he has used with complete success. Three years ago when I visited his Estate I found that the pest was very bad indeed and now he reports that he has practically got rid of it. The following were the methods used:—

- " 1. Put small children on to catch the mosquito and collect the eggs. This should be done all the year round as it is most important.
- " 2. Prune the Tea in the monsoon or dry weather, but not in showery weather.
- " 3. Bury all prunings with Basic Slag at the rate of about 300 lbs. per acre. Holes one to every four trees in alternate lines. This costs about Rs.18 per acre.
- " 4. Have all ravines cleared.
- " 5. Cut out all Cinchona and all the Etha jungle.
- " 6. If the boundary of the Tea is jungle, fell the same one chain back and plant up fuel trees, not Gums.
- " 7. Care must be taken when pruning that mosquitos do not fly into the next field. On the windward side burn leaves and some prunings so as to make a heavy smoke.
- " 8. Moss and clean the bushes after pruning.
- " 9. If mosquito returns after pruning spray immediately with Tobacco juice.
- " 10. Cultivate as much as possible with bulk and Dadap manuring, find these very effective.

" These are the methods I have tried and I am practically quit of the pest, although as you know I had the pest very badly when you were here some three years ago, and in parts abandoned Tea on account of it. I previously tried burning prunings through the tea and piled on the bush, but with no success. I cannot give you individual cost of work, but at the most it would not cost more than 5 cents per lb. made tea excluding the Slagging."

This is most valuable information and as a practical result worth pages of theory and suggestions. Would that we had more of this kind of information coming in about other pests and diseases. Tea planters troubled with Mosquito Blight cannot do better than give these methods, which have proved successful, a thorough trial.

Manurial System.—Planters often write to this office asking me to recommend them a manure for their coffee, or what I consider the best manure for coffee at a reasonable figure. It is almost impossible to recommend a manure without any further data to go upon. Of course one can make up a formula for a good general fertiliser which will probably have

some effect upon any crop and in any kind of soil, but that is not the way to manure coffee or any other crop. I believe in systematic manuring where different manures are applied each year and each application bears a definite relation to that applied the year before and that which will be applied the year following. The results obtained on one estate from such a system are given in this issue of the *Chronicle* and they speak for themselves. The basis of such a system is a soil analysis and wanting this one must at least know something about the nature of the soil, whether it is light or heavy, sand or clay, about its previous treatment, what manures have been applied to it, its present condition of tilth, the kind of shade and mulch, the elevation and rainfall and so on. Most of all it is necessary to know what crop is cultivated; enquiries about suitable manures have before now been asked for and this important detail omitted.

Green Bug in Mysore.—Information has been received from an estate in the affected district that hand plucking has been finished and no more trees have been found to be infected, which shows that the outbreak is under complete control. Spur pruning of all trees that the hand plucking had shown to be very badly infected has also been finished and these trees have been lime washed. The blossom interfered with spraying, but now that this is over spraying operations have been begun. It is reported that the spray recommended, the rosin, soda, soap mixture, kills the scale effectually but the amount of spray mixture required to treat big unpruned trees is large, probably 100 to 150 gallons an acre. This can be reduced to about 80 gallons per acre on the pruned patches. Trees which have not been pruned for years are going to be a trouble as they always carry a lot of long sickly wood which the bug attacks, and they are very difficult to spray, as this kind of tree is matted with cross wood. This is a great objection to the non-pruning system which in some places has become popular. It may be all right when no disease is present, but in the case of an attack of a pest like Green Bug it gives trouble. It is almost impossible to spray an unpruned tree effectually, and for this reason pruning was the first thing recommended in dealing with this outbreak so that the affected trees could be got at with the sprayer.

Protection of Birds.—Some time ago a paper on this subject was published in the *Chronicle* (Vol. VI, p. 330) showing how the trade in feathers was rapidly leading to the extinction of some species of beautiful and useful birds, and that apart from the cruelty practiced in the collection of feathers, the matter was an important one for the agriculturalist. Those who have this subject near at heart will find the following note which appeared in *Nature* of 20th March of interest:—

"At the twenty-second annual meeting of the Royal Society for the protection of Birds, held at the Westminster Palace Hotel, on March 6th, Lord Curzon, as reported in *The Times* of March 7th, strongly deprecated the continuance of the practice of wearing feathers other than those of birds used as food by ladies, and referred to the appalling slaughter of certain kinds of birds of brilliant plumage. In 1911 his lordship stated that in three sales in London no fewer than 41,000 skins of humming birds, 20,700 of birds of paradise, and 129,000 egret plumes were sold. After advertizing to the fact that the egrets are killed while in the breeding plumage, and that certain species or races of birds of paradise are reported to have been exterminated by the plumage-hunters, the speaker observed that although much had been done to stop the trade, yet there were weak lines in the prohibitory chain, among these being the lack of prohibition of the import and sale of feathers and skins in this country."

R. D. A.

PLANTERS' PAPERS.

VI.—Coffee Manuring on a Scientific Basis.

I think the results obtained from 3 years' cultivation and manuring according to a scheme proposed by our Scientific Officer, Mr. R. D. Anstead, should be of interest to all readers of the *Planters' Chronicle* interested in coffee, and I may say, of advantage. Like many other fellow planters, year after year I applied manures, usually nitrogenous, and in the usual style. My 50 acres of bearing coffee on one estate, and 100 acres on another, replied to my best efforts with crops of 5—6 tons on the former, and 14—15 on the latter. From 1902—1910 the former averaged 5 tons, and the latter 14½ tons for 8 years. The manures applied averaged 4 cwts per acre, consisting mainly of Poonac, with bone added occasionally, and in other years fish. The cost worked out to about Rs.20 per acre and I thought I was doing the places well. The Estates looked well and year after year I looked for the bumper that never came! If I got anything like a decent crop (4.5 cwts. per acre) the following year it dropped to 2 cwts. In parts of the Estate the trees had a 'Cabbage' look. Failure began to pall on me and the arrival of our Scientific Officer made me say to myself, "why not begin all over again, get my soils analysed thoroughly well and seek Mr. Anstead's advice?" This I did, sending 4 samples to Mr. Alfred Gordon Salamon, Fenchurch Avenue E. C., who did the analyses very thoroughly and charged £5.5-0 per sample. I sent these analyses to Mr. Anstead and asked his advice. He took every trouble in working out a 3 years' scheme for me, or rather 2 years, and after seeing the results last November, he was able to advise for another year. I accepted his advice without question. Before giving the scheme he asked a number of questions re. Rainfall, Elevation, Aspect &c., and what I was prepared to spend per acre. To the latter I replied Rs.25 plus cartage. This worked out eventually to about Rs.32 per acre, or an increase of Rs. 12 to what I had been spending. My crop went up on the 50 acres from 9 the previous year to 10 tons, and from 10 to 18; on the 100 acres from 9 the previous year to 38, followed by 21. I therefore, on the 150 acres spent 1,800 Rs. more on manures (which was equal to about 1½ tons of crop) and for this increase my crop doubled itself. This year I am expecting (with anything like good rain, which has not come yet, April 7th!) 18—20 tons on the 50 acres, and 30—35 on the 100 acres. If this comes off, and I see no reason why it should not with good rain, I shall average 15 tons for 3 years off the 50 acres, and 30 tons off the 100, against 5 tons for 8 years and 14½ tons. The whole aspect of the estates has changed and parts which were "Cabbage" are now vigorous, with a good spread and long spiky close knotted wood. Parts which have just given 8—10 cwts. an acre are scarcely feeling it and will give 6—7, while other parts which have just given 6—7 are doing the same again. A neighbouring Estate carrying out a scheme on the same lines is having good results also, after a succession of heart-burning failures. Readers will say "Yes, you just happened to hit good seasons, wait and see!" I am open to wait and see, and meanwhile instead of a deficit every other year which is far too common on most estates, I can show handsome profits for 2 consecutive years, and see no reason why I should get a deficit again, provided I carry on manuring and cultivation in the sound way recommended by our Scientific Officer, whose excellent article on manuring, and when, in the *Planters' Chronicle* for January 25th most of us must have read. In addition to my crops increasing, the quality of the bean has vastly improved also. Last year one lot topped the market and the rest also sold well. Previously the coffee from these estates used to be in the same boat as many others and realized very ordinary prices. The report, since I started manuring on the lines laid down by Mr. Anstead, is invariably good, and the liquor, "exceptionally good."

Section.	Manures applied.	Date of application.	Amount applied per acre.	Crop picked.
I. 5 acres.	General Fertiliser ...	March 1910	2½ cwt.	
	1 Poonac ; 2 Bone ; 10½% Sulphate of Potash...	Octr. 1910	2½ cwt.	1910-11. 2 tons
	Basic Superphosphate ...	March 1911	6 cwt.	
	Nitrate of Soda ...	Novr. 1911	1 cwt.	1911-12. 1½ tons
	Complete Fertiliser ...	March 1912	5 cwt.	
	Sulphate of Potash ...	Novr. 1912	1 cwt.	1912-13. 3 tons
	Slaked Lime ...	March 1913	2 tons	
II. 10 acres.	(Fish ...	Novr. 1913	3-4 cwt.	1913-14. estimated 2½ tons.)
	General Fertiliser ...	March 1910	2½ cwt.	
		Octr. 1910	2½ cwt.	1910-11. 2½ tons
	Fish ...	March 1911	5 cwt.	
	Saltpetre ...	Novr. 1911	1 cwt.	1911-12. 2 tons
	Complete Fertiliser ...	March 1912	5 cwt.	1912-13. 4½ tons
	Fish ...	March 1913	5 cwt.	
III. 10 acres.	(3 Basic Slag ; 1 Sulphate Potash...	Novr. 1913	4 cwt.	1913-14. estimated 3 tons.)
	Complete Fertiliser ...	March 1910	2½ cwt.	
		Novr. 1910	2½ cwt.	1910-11. 1½ tons
	Fish ...	March 1911	5 cwt.	
	3 Basic Slag ; 1 Sulphate Potash ...	Novr. 1911	5 cwt.	1911-12. 1 ton
	Complete Fertiliser ...	March 1912	5 cwt.	
	3 Fish ; 1 Sulphate Potash.	Novr. 1912	4 cwt.	1912-13. 2½ tons
IV. 10 acres.	Nitrolim ...	March 1913	2 cwt.	
	(3 Basic Slag ; 1 Sulphate Potash ...	Novr. 1913	3 cwt.	1913-14. estimated 4 tons.)
	General Fertiliser ...	March 1910	2½ cwt.	
		Novr. 1910	2½ cwt.	1910-11. 2 tons
	Basic Superphosphate ...	March 1911	6 cwt.	
	Saltpetre ...	Novr. 1911	1 cwt.	1911-12. 3½ tons
	Complete Fertiliser ...	March 1912	5 cwt.	
V. 15 acres.	Sulphate of Potash ...	Novr. 1912	1 cwt.	1912-13. 4 tons
	Slaked Lime ...	March 1913	2 cwt.	
	(Fish ...	Novr. 1913	4 cwt.	1913-14. estimated 4 tons.)
	Same as IV.	1910-11. 1 ton
				1911-12. 1½ tons
				1912-13. 4 tons
				1913-14. estimated 4 tons.)

P. M. WILKINS.

DISTRICT PLANTERS' ASSOCIATIONS.**Nilgiri Planters' Association.**

At the Annual General Meeting of the Nilgiri Planters' Association held at the Armoury, Ootacamund, on Friday the 28th March, 1913.

PRESENT:—Messrs. L. L. Porter (Chairman), J. S. Nicolls (Honorary Secretary), W. Rhodes James, J. G. Verne, A. K. W. Downing, P. L. D. Beaver, R. N. C. Groves, J. H. Pascoe, Robert Stanes, C. Gray, L. A. G. Rogers, Stanes, C. H. Brock, J. Hedder, G. Oakes, C. W. Deane, W. A. Cherry, E. S. Clarke, Kinlock, F. M. Cockburn, and W. P. Scott. **Visitor:—**Mr. Alister West, *by Proxy*—Mr. B. Von Dulong.

The Chairman, before opening the proceedings feelingly referred to the sudden death of Mr. A. W. Wingrave.

61. Proceedings of last meeting confirmed.

62. *Act 1 of 1903.*—Read High Court ruling in Case No. 62 of 1911 on the file of the Gudalur 2nd Class Magistrate's Court—Mr. J. S. Nicolls vs. Pongay Mistry. The Association were of opinion that a further appeal should be made. Proposed by Mr. E. S. Clarke and seconded by Mr. W. Rhodes James:—

"That this Association offer Mr. Nicolls their support."—Carried unanimously.

63. *Non-Service of Warrants.*—Read letter from the Deputy Inspector General of Police, Southern Range, dated 13th February, 1913.—Recorded.

Read Circular letter from the Taluk Magistrate, Gudalur, dated 1st February, 1913.—

64. *Publication of G. O.s. in the Nilgiri Gazette.*—In reference to No. 47 of meeting held on 14th November, 1912, read Honorary Secretary's letter to the District Magistrate, Nilgiris, dated December 7th, 1912, and the District Magistrate's reply No. 378 of 1912. The Honorary Secretary was instructed to write and ask that all matters affecting Planters should be published in the *Nilgiri Gazette* and not only those with reference to the Labour Act 1 of 1903.

65. *Roads and Communications.*—"The Droog Road"—Necessary steps were being taken for repairs.

Kil-Kotagiri Road.—The following resolution was proposed by Mr. C. H. Brock and seconded by Mr. Deane and carried:—

"That this Association request the District Board to ask Government
"for a special grant to convert the present bridle path to
"Kil-Kotagiri into a cart road by widening of the present road
"and by altering the trace where necessary from the Kodanaad
"road to the Government building at Solar Muttom."

66. *District Board Membership.*—In reference to No. 51 of meeting held on 14th November, 1912, read Honorary Secretary's letter to the President, Nilgiri District Board, dated 7th December, 1912 and the President's reply dated 17th December, 1912, enclosing copy of Proceedings of the District Board meeting held on 18th April, 1911.—Recorded.

67. *Railway Freight.*—In reference to No. 53 of meeting held on 14th November, 1912, read Honorary Secretary's letter to the Secretary, U. P. A.

S. I., dated 7th December, 1912, and his reply dated 9th December and Circular No. 42 of 1912 giving cover to correspondence on the subject. The Honorary Secretary was instructed to place the matter on the Agenda of the next U. P. A. S. I. meeting.

68. *Scientific Department.*—Read U. P. A. S. I. Circular No. 243. Proposed by Mr. W. Rhodes James and seconded by Mr. J. H. Pascoe.

"That this Association is in favour of the renewal of the appointment of the Sc. Officer for another 5 years after 1914." Carried.

69. *The Late Mr. Edmiston.*—In reference to No. 59 of meeting held on 14th November 1912, read Mrs. Edmiston's letter to the Honorary Secretary, dated 23rd December 1912, thanking the Association for their kind sympathy.

70. *School of Tropical Medicines.*—Read Messrs. Harrison and Crossfield's letter of 17th December 1912, enclosing copies of an appeal for £100,000 for the extension and development of the London School of Tropical Medicines. Contributions sent to Messrs. Harrison and Crossfield, Ltd., Quilon, will be forwarded to their London House.

71. *Tea Cess.*—Read Circular No. 170 T.C., dated 27th January 1913, from the Asst. Secretary Indian Tea Cess Committee notifying that the Cess would be continued for a further period of 5 years.—Recorded.

72. *Customs Duty on Coffee, Tea and Rubber Machinery.*—Read U. P. A. S. I. Circular No. 39 12, dated 20th November 1912. The meeting was of opinion that the necessary machinery should be imported free of Customs duty. The Honorary Secretary was instructed to write to the Secretary, U. P. A. S. I. to that effect.

The Honorary Secretary then read the following Annual Report and presented accounts:—

"Mr. Chairman and Gentlemen,—I have the honour to submit to you my Annual Report and Accounts for the year ending 31st December 1912. There have been four General meetings held, viz., on the 16th April, 30th May, 18th July and 14th November at which there were respectively 19, 21, 16 and 15 members present. At the meeting held on the 16th April we had pleasure of seeing the Chairman of the U. P. A. S. I. amongst us.

New Rules.—These were passed at our May meeting and have been circulated to all members. Subscription to the Association is now assessed on an acreage basis. This has unfortunately brought in the resignation of one of our oldest members, viz., the Onchiterlou Valley representing 4,362 acres. We were only receiving on account of this large acreage Rs. 50 as subscription to the funds of the Association and Rs. 100 as subscription towards the S. O. Fund. Subscriptions towards the S. O. Fund have been paid to the U. P. A. S. I. as a separate subscription to what we have been paying on our acreage basis. Our subscription to the U. P. A. S. I. on 4,362 acres represents Rs. 181-12. We have agreed now to pay towards the general fund of the parent association on an acreage basis of 2 annas per acre, the remaining 6 pies of your assessment being available for the expenses of our own Association.

I sent all members reply post cards requesting them to favour me with acreage particulars of their estate and with what products such acreages were planted. A great number have complied with my request, but some have put my post card along with noused hali in that ever ready "W.P.B."

It is to be regretted. It has not only delayed the sending out of bills to members for subscription due, and in their instances perhaps has prevented my making accurate assessments, but it has also prevented my placing before you a correct account of the total number of acres planted with coffee, tea, rubber and other produce.

Subscription to the S. O. Fund.—I think this was originally promised by members for 5 years. This terminates in 1914. Those who have resigned their membership of our Association should be requested to fulfil this promise.

Labour.—We have during the year discussed a Registration Scheme and you will have seen from the annual report of the W. P. Association that there is little likelihood of its being put into force even in an amended form. The discussion on the scheme has, as far as I am aware, not started "even brain waves." Personally I think considerable improvement can be gained by planters working more together. If a planter has a rogue of a maistry now, he has one *ajai* and that is to plant the rotter on some one else and recover his advance and when he has succeeded he pats himself on his back and thinks himself smart. It would have been more to the interests of the whole community of which he is one if he branded the rogue and suffered his loss. I think something might be gained if Honorary Secretaries of Associations kept a register of maistries employed by all members of their Associations. In this way if a maistry came to a member for advance he might probably by referring to the Honorary Secretary of his Association find something about the man's past history, or if the maistry came from some other district, a reference to the Honorary Secretary of the Association of that district might bring the required information. I should like to see it go further and that planters agreed to advance no new maistry without first making a reference to his own Honorary Secretary. I am certain the maistry of to-day is not the same kind of man he was when I first started planting in Ceylon 26 years ago. He has deteriorated, and I shall not attempt to try and find reasons for this. From what one reads in papers I have only 4 years more before I ought to be put on the shelf to make room for some more up-to-date youth. I shall read you to-day a letter written by a late assistant tea maker of mine who came from Ceylon and returned back there addressed to a cooly of my estate. He informs the cooly that his superior has asked him to procure 20 or 30 Chinese coolies. Is this an up-to-date method of recruiting labour? I would then warn you all against engaging "Ceylon Tea-makers or Conductors."

S. I. R. Freight.—I regret to say that no progress has been made. A plan showing places where receiving and forwarding stations should be placed was prepared by Mr. Porter, but there the matter has stopped.

Experimental Plot.—The Committee you appointed to watch your interests have taken considerable trouble in considering the various points and in recording their opinion on them. The thanks of the Association are due to them. The work has been started and I sincerely hope the experiments that are being carried out will prove beneficial to those interested in the Coffee Industry.

S. I. P. E. Fund.—I would refer you to what I said in my Annual Report last year. I place a list on the table and ask all present to put their names down.

The Accounts.—The accounts are on the table and have been duly audited by a member of the Association. There is one entry needing expla-

nation to you and that is the amount I have put down to be written off. I brought it to your notice last year. I have done all I can to recover these outstandings against certain members. They treat my letters and reminders with supreme contempt; they do not even object to receiving registered letters. It would be so much easier if they would write denying their liability or regretting their inability to pay. I see no use of going on increasing their debt to the Association by adding on to it yearly subscriptions. I am afraid next year it will be necessary to write off a further amount of Rs.155.

3 Members representing 40 acres resigned during the year.

3 Members representing 360 acres joined.

On 31st December, 1912, the total number of members was 39 representing 16,179 acres on which acreage we paid our subscription to the U. P. A. S. I.

Since 1st January, 1913, the following members have resigned:—

Mr. Wap-hare representing	...	4,362 acres.
Mr. Martyn	...	300 acres.

Mr. Martyn resigned as he has sold his estate, so I hope this acreage will not be lost for ever.

On 1st January, 1913, the total acreage represented by members is 12,760 acres of which 5,209 acres is planted with Tea, 4,620 with Coffee, 522 with Rubber and 2,409 acres is chiefly represented by the members who have thrown away my post cards.

The total assessment on this acreage is	...	Rs. 1,993 12 0
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Our total subscriptions to U. P. A. S. I. for 1913-14	Rs. 1,595 0 0
will be

as against

1912-13 U. P. A. S. I., subscriptions	...	Rs. 696 10 0
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1912-13 S. O. Fund	...	Rs. 1,250 0 0
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Rs. 1,946 10 0

There will be after paying the U. P. A. S. I. Rs. 398 12 0

Provided all members pay up—left for working your own Association.

Thanking you for the support you have given me I now place my resignation and that of the Committee in your hands?

Proposed by Mr. W. Rhodes James and seconded by Mr. C. H. Brock.

"That the accounts be passed and the Report adopted, a vote of thanks be passed to the Honorary Secretary."—Carried.

73. Election of Office-bearers for 1913.—

<i>Chairman</i>	...	The Hon'ble Mr. E. F. Barber.
<i>Vice Chairman</i>	...	Mr. L. L. Porter.
<i>Hon'y Secretary</i>	...	Mr. J. S. Nicols.

Votes of thanks to the Chair and the O. C. Nilgiri Volunteers for the use of the room terminated the proceedings."

(Signed) L. L. PORTER,

Chairman.

(Signed) J. S. NICOLLS,

Honorary Secretary.

Papers on Table.—Department of Agriculture Madras, Leaflet No. IV of 1912.

Do do do Bullet: No. 65 Vol. III.

The Agricultural Journal of India, Vols. VII and VIII.

Memoirs of the Department of Agriculture in India, Vols. I and III.

Do do do Vols I to V.

The Agricultural Ledger No. V.

Report of the Agricultural Institute, Pusa, 1911-12.

Agricultural Research Institute, Pusa, Bullet: Nos. 31 and 32.

Report on the Operations of the Dept. of Agriculture in Madras for 1911-12.

59th Annual Report of the Ceylon Planters' Association.

VARIABILITY IN THE QUALITY OF SEEDS AND CUTTINGS.

The relatively large number of crops that are propagated by the use of cuttings and by other vegetative means, is a characteristic feature of tropical agriculture. Another not able feature is the relatively large size of the seeds of those plants which are reproduced sexually, as well as the fact that generally this seed is sown in nursery beds previous to planting out the seedlings in the field or orchard. There are one or two exceptions, for instance, cotton, maize and sometimes rice are sown in the field direct; but, in a general way, it may be stated that the reproduction and establishment of economic plants, together with methods of 'seed' supply receive greater personal supervision in the tropics than do these matters in other parts of the world.

It is pointed out in the article referred to, that seeds a better term under tropical conditions would be 'planting material' are by far the most variable things the agriculturist has to purchase or produce; weight for weight they are the most costly, and finally the entire success or failure of a crop (and even of succeeding crops) may be wholly determined by the kind or condition of the material planted.

Variability in quality shows itself mainly in the degree of purity and germination capacity. For reasons already indicated, degree of purity cannot vary to a large extent in tropical planting material unless the intermixture of different strains, or infection with disease, be included under this heading. On the other hand, germination capacity varied very much, the chief causes being maturity of 'seed' at time of collection, climatic conditions and exposure during the flowering period, age of 'seed' and lastly, mechanical injury caused by careless handling, or by insect pests in the field or during storage.

Age is perhaps the most important cause in the tropics of variation in germination capacity. Planting material in the tropics is typically succulent; the long-distanced and necessarily slow distribution under warm conditions reduces germination capacity mainly through the loss of moisture, and unless special packing is resorted to, and unless the matters attendant on this distribution be dealt with promptly and with care, there must always be variability in the germination capacity of the transported material.—*The Agricultural News*.

CORRESPONDENCE.

THE EDITOR.

The "Planters' Chronicle."

Dear Sir,—I have been meaning to write to you for some time but I have been so busy I have not been able to manage it, or to send you notes of some experiments with explosives which are as follows:—

My experiments were carried out with gelignite in 6 year old tea which has been going out in patches on account of a hard laterite sub-soil coming within about 9–12 inches of surface soil and apparently of considerable depth.

The first charges I used at 2½ feet, these I found too shallow, I then put holes in at 2 feet 9 inches with better results: again more at 3 feet and 3 feet 5 inches these I found perfect. I put charges at 12 square apart and fired in groups of 4 at a time, standing between the shots while they exploded; the whole ground was thoroughly shaken below, hardly any surface movement being noticeable, but on digging on the shots and between them, I found the sub-soil to be thoroughly cracked or broken. I had the holes made with an old crowbar about 4 feet 6 inches long in which I put a cross-piece about 1 foot long chisel point on bar and I found a hole can be made 3 feet 3 feet 3 inches in about 2 minutes, driving the bar in with a 5 or 7 lb hammer.

I have written Nobel's Agents regarding cheap fuse and the lighter cap No. 3 instead of No. 6, this is quite suitable for dynamite, but not heavy enough for gelignite, but I see no reason why dynamite shouldn't be used this being slightly cheaper. I work out the cost of a shot with this.

A No. 3 cap and 3 feet of common fuse all right unless the ground is wet at 3 annas per shot plus freight with 200 shots per acre Rs.—56.

I shall continue using this method, more particularly on patches where tea is lookink stunted and sick, making it probable that its feet are on hard subsoil and will let you know the results from time to time.

Yours faithfully,

Signed: COLIN HINDELY.

SPRAYING TEA BUSHES.

A good insecticide, costing but little and easily obtainable, is what H. Maxwell Lefroy, Esq., the Imperial Entomologist, has been trying to render available to planters in India for several years and the new insecticide Vermisapon has been very highly recommended by him. The manufacturers consulted Mr. Lefroy and he suggested certain modifications of formula, the result has been highly satisfactory. He has tested Vermisapon on a variety of insects and says that it is a thoroughly reliable contact poison for use against all sucking insects such as bug, mealy bug, scale insects, plant lice, thrips, etc., also against small caterpillars and other biting insects. It is made in Calcutta by Smith, Stanistreet and Company, and is therefore easily obtainable and taking this into account with the fact that its price is remarkably low, and considering what Mr. Lefroy has said about it, we think that Vermisapon will prove to be extremely useful to planters in India. The manufacturers have also a spraying machine, called "The Auto-Spray", which is exceptionally suitable for use on tea gardens, etc., as it is practically automatic, is economical and cheap.—*The Indian Planters' Gazette and Sporting News.*

SELECTED CUTTINGS.

Artificial Fertilisers in Russia.

The official "Vestnik Finansov" (St. Petersburg) of 2nd March publishes an article drawing attention to the growing practice of intensive cultivation in Russia and the consequently increasing use of fertilisers. The average yearly consumption of artificial manure in Russia during the past 10 years works out at 13,000,000 pounds; 6,400,000 pounds of which consisted of superphosphates, and 4,500,000 pounds of basic slag. There has been a remarkable increase during the last few years, as is shown by the total imports of mineral fertilisers, which rose from nearly 9,000,000 pounds in 1908 to more than 24,000,000 pounds in 1911. Superphosphates and basic slag account for about two-thirds of these amounts. Russia is as yet unable to produce anything like the quantity of artificial manure required for agricultural purposes in the country; the total home production of superphosphates having only risen from 4,104,603 pounds in 1907 to 5,338,137 in 1909.

1,000 pounds = 16 tons (about)

--The Board of Trade Journal.

Coffee.

The reduction in the world's visible supply is exactly the same as it was during March last year, although the Brazilian receipts have been 150,000 bags less, so that the deliveries must have been correspondingly smaller. The terminal market at one time was 1s. dearer, but want of support led to a reaction, and at the close rates are about 3d. cheaper. More confidence, however, has been shown as the decline has probably been quite sufficient, taking into consideration the actual stocks and the smallness of this year's crop of mild descriptions. The latter which have been offered recently in large quantities will shortly be finished, and then more attention will have to be given to Santos. The rumoured issue of a new loan by the State of San Paulo to take up the remainder of the valorisation coffee is not generally accepted as likely to take place, but reliable information is difficult to obtain. The auctions have been heavy, and with a strong demand for all grades of Costa Rica prices have steadily advanced: medium and common sorts are fully 2s. to 2s. 6d. dearer, while the finer grades are from 1s. to 1s. 6d. per cwt. higher. As more than half the crop has been received, rates may possibly advance still further.

LONDON COFFEE RETURNS.

	Home Consumption.		Export.		Stock.	
	1913	1912.	1913	1912.	1913	1912.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
For week ended						
March 29 ...	207	265	336	387	13,066	13,728
For 13 weeks ended						
March 29 ...	2,568	1,230	3,591	5,201

--The Produce Market Review.